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EXAMINER	
HODGE, ROBERT W	

ART UNIT	PAPER NUMBER
1729	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/791,269	Applicant(s) CHUNG ET AL.	
	Examiner ROBERT HODGE	Art Unit 1729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,8 and 19 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1,8 and 19 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/17/11</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 11/17/11 has been considered in part by the examiner. It is noted that KR 2002-0074550 was cited to applicants on 7/7/09 by the Examiner and therefore the reference does not need to be cited again.

Response to Arguments

Applicant's arguments filed 11/17/11 have been fully considered but they are not persuasive. Applicants state that the prior art either alone or in combination does not teach that "the case has an outer wall substantially perpendicular to the main surfaces of the upper and lower case bodies". Applicants further state that supposedly "the side wall of the combination cases between case 31 and 33 appears to be clearly disposed at an angle with respect to the main surfaces of cases 31 and 33".

Applicants arguments are contradictory because first applicants argue that the case wall is supposed to have a mostly (i.e. substantially) perpendicular nature (i.e. angle) and then applicants argue that the prior art fails to teach the limitations of the claims because the case wall as described very generally by applicants is disposed at an angle. Applicants also argue that the wall in question needs to be at an angle (i.e. substantially perpendicular), but then argue that the prior art teaches a wall at an angle, but supposedly said angle of the prior art is not the same as recited in the instant claims, however applicants do not provide any specifics as to how the two are different,

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applicants only provide generalizations. Furthermore applicants have not clearly defined in their specification what is meant by “substantially perpendicular”, therefore the plain meanings of the words are used. According to Dictionary.com the following definitions are provided for the claim terms in question:

sub·stan·tial

☒ sə b' stænʃ ə l Show Spelled[suh b-**stan**-shuh l] ☒ Show IPA

adjective

1.

of ample or considerable amount, quantity, size, etc.: *a substantial sum of money.*

2.

of a corporeal or material nature; tangible; real.

3.

of solid character or quality; firm, stout, or strong: *a substantial physique.*

4.

basic or essential; fundamental: *two stories in substantial agreement.*

5.

wealthy or influential: *one of the substantial men of the town.*

per·pen·dic·u·lar

☒ , pə rpə n' dī kyə lə r Show Spelled[pur-puh n-**dik**-yuh-ler] ☒ Show IPA

adjective

1.

vertical; straight up and down; upright.

2.

Geometry . meeting a given line or surface at right angles.

3.

maintaining a standing or upright position; standing up.

4.

having a sharp pitch or slope; steep.

5.

(*initial capital letter*) noting or pertaining to the last style of English Gothic architecture, prevailing from the late 14th through the early 16th century and characterized by the use of predominantly vertical tracery, an overall linear, shallow effect, and fine intricate stonework.

Given the above definitions the claim terms as recited in the instant claims given their broadest most reasonable interpretation in light of the instant specification (which does not provide a definition) are understood to mean "a considerable angle having a sharp pitch or slope". Therefore the Noh reference reads on the claims as recited.

With regards to the substitution of a protection circuit board for a short circuit protection means applicants state that equivalency must be recognized in the prior art. It is noted that the office action does not rely on the "art-recognized equivalence standard" as applicants purport. The office action actually relies on two completely different obviousness rationales to show obviousness. The first is using the Teaching Suggestion Motivation rationale and the second is the simple substitution of known elements under MPEP 2141 (III) Rationale B. However to further emphasize obviousness, Noh teaches a safety element that protects the battery and AAPA teaches a safety element that protects the battery. Therefore a skilled artisan would find it obvious to substitute one safety element for another.

Applicants' remarks regarding the newly added claims limitations will be addressed in the grounds of rejections below. Furthermore it is noted that the instant specification does not define the terms "main surface". The case bodies will in fact have surfaces but there is nothing in the instant specification to define which one is a "main" surface.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 8 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. No support can be found in the instant specification to show that applicants had possession of tabs being bent at a substantially right angle “with respect to the main surface of the upper and lower case bodies”. The only support that can be found in the instant specification for the tabs being bent at a right angle, is with respect to the sealing surfaces 32d and 32e (see paragraphs [0046] and [0051] of the instant application publication).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,387,567 hereinafter Noh in view of Applicants’ Admitted Prior Art hereinafter AAPA.

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Regarding claims 1 and 19, as seen in figures 2, 4 and 7, Noh teaches a pouch-type lithium secondary battery comprising a battery unit 20 comprising: a positive electrode plate 21, a separator 23, and a negative electrode plate 22, wherein the separator is disposed between the positive and negative electrode plates; electrode tabs 25 and 27 extending from each of the positive and negative electrode plates; a case having a space 32 to accommodate the battery unit, comprising an upper case body 33 having a main surface and a lower case body 31 having a main surface, wherein the upper and lower case bodies are joined together at a sealing portion 31a and 33a disposed along the periphery of the space, wherein the sealing portion comprises an edge, wherein the case has an outer wall substantially perpendicular to the main surfaces of the upper and lower case bodies; and a short circuit protection means 43 directly connected to the positive and negative electrode tabs, wherein the electrode tabs extend from the positive and negative electrode plates, through the sealing portion and past the edge of the sealing portion, and are bent only once so as to extend in a plane that is disposed at a substantially right angle with respect to a plane of the sealing portion, without substantially extending beyond a thickness of the case, wherein the short circuit protection means is disposed between the outer wall of the case and the bent electrode tabs, wherein the electrode tabs are bent in a direction that is vertical with respect to the sealing portion of the case, so that the vertically extending portions of the electrode tabs are positioned outwards of the edge of the sealing portion, and wherein the electrode tabs have main surfaces that are disposed parallel to the outer wall of the case, in an upright position, and are substantially perpendicular to a

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contact surface at which the electrode tabs contact the edge of the sealing portion, wherein the electrode tabs connect to the short circuit protection means on a side opposite to the outer wall of the case (see whole document, including but not limited to: Abstract, and column 3, line 66 – column 5, line 65). Regarding the recitation that the tabs are bent at a substantially right angle “with respect to the main surfaces of the upper and lower case bodies”, assuming *arguendo* applicants are referring to planar surfaces, Noh clearly teaches planar surfaces 33 and 31. Furthermore as seen in figures 5-7, the tabs 25 and 27 are bent only once at a considerable angle having a sharp pitch or slope, (i.e. “a substantially right angle”), with respect to the planar surfaces 33 and 31 and therefore Noh reads on the claims as recited.

Regarding claim 1, Noh does not teach that the short circuit protection means is a protection circuit board.

As seen in figures 1 and 2 and described in paragraphs [0003]-[0015] of the instant specification, AAPA teaches a pouch type lithium secondary battery 10, comprising a battery unit 11 comprising a positive electrode plate 13, a negative electrode plate 14, a separator 15 disposed between the positive and negative electrode plates, electrode tabs 16 and 17 extending from the respective positive and negative electrode plates, a protection circuit board 100 with electrode terminals 101 and 102 that are directly electrically connected to the electrode tabs, the electrode tabs further comprise insulating tape 18 between the electrode tabs and the sealing surface such that the insulating tape is wrapped around the portions of the electrode tabs bent from a leading edge of the sealing surface.

At the time of the invention it would have been obvious to one having ordinary skill in the art to substitute the protection circuit board for the short circuit protection means of Noh as taught by AAPA in order to provide a pouch type lithium battery that not only prevents short circuiting between the positive and negative tabs but will add an addition layer of protection to the secondary battery during charge and discharge to prevent the battery from exploding such as by overcharging. Simple substitution of one known element (protection circuit board) for another (short circuit protection means) would achieve the predictable results of provide a pouch type lithium battery that not only prevents short circuiting between the positive and negative tabs but will add an addition layer of protection to the secondary battery during charge and discharge to prevent the battery from exploding such as by overcharging. See MPEP 2141 (III) Rationale B, KSR v. Teleflex (Supreme Court 2007).

In the alternative Noh teaches the claimed invention except for bending the electrode tabs at a perfect right angle with respect to the main surfaces of the upper and lower case bodies. It is noted that the orientation of the tabs will not affect the operation of the battery as a whole (there is also nothing in the instant specification to show criticality to the specific degree of the angle at which the tabs are bent) because the tabs will still be connected to the protection circuit board regardless of how they are bent and therefore it would have been obvious to one having ordinary skill in the art to bend the tabs only at a right angle since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Regarding claim 8, Noh does not teach insulating tape around the electrode tabs.

AAPA as discussed above is incorporated herein.

At the time of the invention it would have been obvious to one having ordinary skill in the art to wrap insulating tape around the electrode tabs of Noh as taught by AAPA in order to increase the sealing efficiency of the battery. If a technique has been used to improve one device (wrapping insulating tape around the electrode tabs), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way (increasing the sealing efficiency of the battery), using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

Claims 1, 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Admitted Prior Art hereinafter AAPA in view of U.S. Patent No. 6,387,567 hereinafter Noh.

Regarding claims 1, 8 and 19, AAPA as discussed above is incorporated herein. AAPA further teaches a case 12, comprising upper and lower case bodies both having a main surface and both of which form a space 12a to accommodate the battery unit, a sealing surface 12b along the periphery of the space joining the upper and lower case bodies together, wherein the sealing portion comprises an edge, wherein the case has an outer wall substantially perpendicular to the main surface of the upper and lower case bodies, wherein the electrode tabs extend from the electrode plates through the sealing portion past the edge of the sealing portion and are bent (see citations above).

AAPA does not teach that the tabs are bent only once at a substantially right angle with respect to a plane of the sealing portion.

Noh as discussed above is incorporated herein.

At the time of the invention it would have been obvious to one having ordinary skill in the art to bend the tabs of AAPA only once at a substantially perpendicular angle as taught by Noh in order to minimize the volume occupied by the pouch type lithium secondary battery (column 5, lines 40 et seq. of Noh) thereby enhancing the productivity of the pouch-type lithium secondary battery by reducing defects and improving the overall safety of the battery (column 6, lines 25 et seq.) and also since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. If a technique has been used to improve one device (bending tabs only once at a substantially perpendicular angle), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way (minimizing the volume occupied by the pouch type lithium secondary battery (column 5, lines 40 et seq. of Noh) thereby enhancing the productivity of the pouch-type lithium secondary battery by reducing defects and improving the overall safety of the battery (column 6, lines 25 et seq.)), using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007). The combination as provided for above would also result in the tabs being bent only once at a substantially right angle with respect to the main surfaces of the upper and lower case bodies.

In the alternative AAPA teaches the claimed invention except for bending the electrode tabs only once at a substantially right angle. It is noted that the orientation of the tabs will not affect the operation of the battery as a whole because the tabs will still

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be connected to the protection circuit board regardless of how they are bent and therefore it would have been obvious to one having ordinary skill in the art to bend the tabs only once at a substantially right angle since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Claims 1 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noh in view of WO 01/99211 (U.S. Patent No. 6,994,926 is used as the English Equivalent Document) hereinafter Ikeuchi.

Noh as discussed above is incorporated herein.

Noh does not teach that the tabs are bent at 90 degrees with respect to the main surfaces of the upper and lower case bodies and that the short circuit protection means is a protection circuit board.

As seen in figure 4, Ikeuchi teaches a battery comprising upper and lower planar surfaces (i.e. main surfaces) with tabs 107 and 108 connected to the battery and a protection circuit board 104 and 113, wherein the tabs are bent at 90 degrees with respect to the upper and lower planar surfaces of the battery (column 11, lines 5 - column 12, line 13).

At the time of the invention it would have been obvious to one having ordinary skill in the art to bend the tabs of Noh at 90 degrees with respect to the main surfaces of the upper and lower case bodies as taught by Ikeuchi in order to provide a battery that eliminates the resistance shift which could be caused by bending stresses (column 12, lines 30-32 of Ikeuchi). If a technique has been used to improve one device (bending tabs at a 90 degree angle), and a person of ordinary skill in the art would recognize that

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it would improve similar devices in the same way (providing a battery that eliminates the resistance shift which could be caused by bending stresses (column 12, lines 30-32 of Ikeuchi)), using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007). Furthermore at the time of the invention it would have been obvious to one having ordinary skill in the art to substitute the protection circuit board for the short circuit protection means of Noh as taught by Ikeuchi in order to provide a pouch type lithium battery that not only prevents short circuiting between the positive and negative tabs but will add an addition layer of protection to the secondary battery during charge and discharge to prevent the battery from exploding such as overcharging and overcurrent (column 12, lines 14-25 of Ikeuchi). Simple substitution of one known element (protection circuit board) for another (short circuit protection means) would achieve the predictable results of provide a pouch type lithium battery that not only prevents short circuiting between the positive and negative tabs but will add an addition layer of protection to the secondary battery during charge and discharge to prevent the battery from exploding such as overcharging and overcurrent (column 12, lines 14-25 of Ikeuchi). See MPEP 2141 (III) Rationale B, KSR v. Teleflex (Supreme Court 2007).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noh in view of Ikeuchi as applied to claim 1 above, and further in view of AAPA.

Noh as modified by Ikeuchi does not teach insulating tape around the electrode tabs.

AAPA as discussed above is incorporated herein.

At the time of the invention it would have been obvious to one having ordinary skill in the art to wrap insulating tape around the electrode tabs of Noh as modified by Ikeuchi as taught by AAPA in order to increase the sealing efficiency of the battery. If a technique has been used to improve one device (wrapping insulating tape around the electrode tabs), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way (increasing the sealing efficiency of the battery), using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2003/0165736, teaches a battery with tabs that are bent once to rise up (paragraph [0049]).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ula Ruddock can be reached on (571) 272-1481. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/
Primary Examiner, Art Unit 1729